Dermatologic Radiotherapy—R.I.P.

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■ *A questionnaire returned by nearly 3,000 dermatologists indicates that about 75 percent of them have discontinued completely the use of x-ray therapy in acne. An additional 11 percent use it in less than 10 percent of their patients who have this disease.*

"Hazards" constituted the greatest deterrent to the use of ionizing radiation. Yet the assumption that it can cause skin cancers, in the absence of radiodermatitis, is not proved and its importance as an additive energy to solar radiation is considered to be limited.

About one-third of the respondents expressed belief that better treatments were available for this condition. An equal number were concerned with public resistance to this therapeutic agent, which, however, seems to be more apparent than real. Probably the major roadblock was posed by the dermatologic training centers where teaching was withheld despite a rule of the American Board of Dermatology favoring it. Other factors mentioned with some frequency included ineffectiveness of radiotherapy, lack of equipment, and fiscal and medicolegal considerations.

This study indicates that dermatologic radiation therapy is passing into oblivion.

AS A PERPLEXING SPIN-OFF of the age of the fissured atom, the dangers of x-radiation came to be so celebrated that use of this helpful energy in the treatment of acne has sharply diminished.

To find out how much and for what reasons its use for this purpose has been curtailed by specialists in a field where once it was widely employed, a simple questionnaire was sent to 4,280 dermatologists in the United States, Canada and in the Caribbean. Thirty-four were returned by the postoffice as being undeliverable, leaving a total of 4,246 that presumably reached the addresses. A total of 2,871 (67.6 percent) were returned. This is significant both from the standpoint of total number and of percentage received.

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Results

The returns were subjected to computer analysis. It was obvious from this survey, that dermatologic radiotherapy is a thing of the past: 75 percent of the respondents never use x-ray therapy in acne and an additional 11.1 percent use it in less than 10 percent of the patients. The incidence of complete avoidance varied in dif-

ferent age groups—97.8 percent of those not yet in practice, 90.4 percent of those in practice one to five years, 82.9 percent in practice, 6 to 10 years, 70 percent 11 to 20 years and only 57.4 percent more than 20 years. Since the newest practioners use it least, the proportion of physicians employing this energy in the management of this dermatosis can be expected to decrease as time passes.

One must wonder about the reasoning behind this discarding of x-radiation in this condition. The respondents were asked to mark boxes explaining why they discontinued use of this therapeutic agent. The results are interesting. The statistics do not add up to 100 percent because some of the physicians did not check any boxes while others marked more than one. Incidentally, there was a place for "comments," and 120 respondents took advantage of this to berate the use of x-radiation in benign dermatosis in terms such as "criminal," "no place in dermatology," and "the lack of teaching of this is commendable." Of some interest is the fact that 98 of those who answered took the time to jot down good things about it, including "the best treatment for acne," "my Sunday punch in resistant cases," and "I gave up x-ray therapy but recently have returned to it because of disillusionment with other therapeutic approaches." So while the respondents were vehement in their evaluation of this approach, there were about as many on one side of the fence as on the other.

But to consider what reasons were given for discarding roentgen rays in dermatology, the following findings resulted.

Hazards. This was the number one deterrent. It was mentioned by 1071 of the group (37.3 percent). Yet, there is adequate evidence that dermatotherapy does not cause shortening of life, leukemia, radiodermatitis or genetic mutations, and in fact no one mentioned any of these factors specifically. Most stuck to the general term *hazards.*

However, a number, especially among the less experienced age groups, pointed out that they have encountered patients with basal-cell epitheliomas who had had x-ray therapy for acne many years previously. They seemed to consider this significant. On the other hand, it has been demonstrated repeatedly that small doses of radiation do not cause premalignant or malignant alterations.[1,2] It is a question of overdosage. While the possibility of co-carcinogens is recognized, there is no evidence that a course of 600 to 900 r of superficial x-ray therapy given in 10 to 12 divided doses contributes more to potential solar carcinogenesis than does a round of golf or an afternoon of swimming.

Better Treatments. A total of 875 respondents (30.4 percent) expressed belief that x-ray therapy was unnecessary since there were better alternate treatments available. Antibiotics, especially tetracycline, were easily the most popular agents mentioned. However, actinotherapy, cryotherapy, local remedies, acne surgery, corticosteroids, anticontraceptive tablets, and others, had their adherents. This acceptance did not vary significantly in the various age groups.

My own results with all of these methods *plus* radiotherapy is not so good that I can not use all the help that I can get in the management of my patients with acne. The use of tetracycline does not contraindicate the incorporation of additional measures into the regime, including x-radiation. The results of x-ray treatment can be improved by the addition of antibiotics. There is no evidence that either should be used alone. The therapeutic results are imperfect with each. Failures are not uncommon. In a study (being published elsewhere) of 1,051 patients with acne treated with x-radiation, 147 had complete clearing and more than 500 had improvement that was estimated at over 85 percent. This investigation indicates that x-radiation is of benefit in the management of this dermatosis and should not be discarded.

Public Resistance. The importance of this facet can be gauged by the realization that 32.2 percent of the respondents mentioned this as a factor in their avoidance of radiotherapy. It is of interest that this assumed increasing importance with greater experience. Public resistance to the use of x-rays concerned only 9.8 percent of those not in practice, 18.2 percent of the one to five year group, 30.0 percent of the six to 10 year group, 40.4 percent of those with 11 to 20 years' experience and 50.9 percent of those who had been treating dermatologic patients for more than 20 years.

Of course we have all encountered the patient (often an educated intellectual) who questions the safety of this treatment or refuses it. Since the squeaking wheel gets the grease, we tend to overemphasize his complaint. The actual effect

of this was studied in the previously mentioned survey of 1,051 patients treated with x-rays for acne. It was found in that investigation that 50.5 percent completed the 12 treatments recommended. Approximately 80 percent of the group received more than six treatments. Only 2.8 percent did not return after the first treatment. The years of greatest resistance to this modality are said to have been 1946 to 1960, a period which embraced 52.4 percent of the patients in the survey. Of this group, 62.2 percent accepted treatment with ionizing radiation compared with 59.1 percent for the entire series seen between 1937 and 1969. Actually, a greater proportion of patients completed the course of treatment during this time (52.6 percent against 50.5 percent) and more submitted to over six treatments (82.4 percent against 79.5 percent) than for the entire group. In other words, resistance to this energy was actually less during the so-called "scare period."

Lack of Training. The American Board of Dermatology, Inc., publishes a Guide for Residency Programs in Dermatology. This says: "The resident should be prepared to undertake the radiobiologic therapy of skin lesions when indicated. He should have had practical clinical instruction in radiologic techniques, as well as study of the underlying basic principles. Special attention should be devoted to the practical aspects of radiation protection. He should be aware of the clinical significance of the newer radiologic tools, including isotopes."

It does sound clear, then, that the training centers are charged with the responsibility of providing the trainee with practical information on this subject. Yet, according to Cipollaro,[3] none of these institutions offers a formal course in this modality. Repeatedly, in answers to the questionnaires, we find the response, "We were not taught how to use x-rays." Three hundred and ninety-one (13.6 percent) of the entire group explained (at least partially) their avoidance by this factor. This decreased with increasing years in practice (44.7 percent in those who had not yet entered practice, 36.4 percent in the group with one to five years' experience, 19.0 percent in the six to ten year group, 7.8 percent in the 11 to 20 year bracket and 5.2 percent in those trained more than 20 years ago). The lesson is clear: The training centers, with or without good reason, are preventing the new dermatologist from acquiring the requisite skill in x-ray therapy of those trained more than 20 years ago. This is the most potent factor in the reduced use of this dermatologic tool. As one experienced dermatologist pointed out, it is a good thing that dermatoradiotherapy is dying out because the "new dermatologists know nothing about its use and their adoption of this modality would lead to great damage."

Ineffectiveness. Three hundred and forty-two correspondents (11.9 percent of the series) felt that x-ray therapy was a poor therapeutic method for acne. The main complaint was concerned with recurrences. While one cannot minimize the truth of this allegation, previous investigations have indicated that this can be minimized by withholding x-ray therapy until the patient attains the age of 18 years or more. Since the disease is self-limited and tends to disappear in many cases in the late teens and early twenties, the recurrence rate is lower in older ages than when the energy is applied to individuals in their midteens. A few practitioners are using more x-ray therapy than previously. Some of the reasons for this swimming against the current might be compared with the reasons for discarding the use of the modality. "Therapeutic efficacy" was mentioned by 115, "disappointment with other methods" was mentioned by 73, "safety" by 33, and "other reasons" by 19. In other words, not all dermatologists condemn its use.

Lack of Equipment. While this factor could have been overcome easily had there been the will to do so, 333 respondents (11.5 percent) mentioned this as a problem. A number did not feel that they wished to have the equipment. Two experienced dermatologists offered to donate their machines without charge to anyone who would take them away. One said that the clinic in which he works offered to buy him apparatus for radiologic therapy but he refused because of "therapeutic ineffectiveness." Predictably, this factor was more important in the younger age groups because in the "old days" all dermatologists purchased a source of x-rays on entering practice. The range of those mentioning the "lack of equipment" varied from 29.2 percent in the one to five year group to 4.3 percent among those in practice more than 20 years. On the whole, this is not an important cause for not using radiotherapy in acne.

Fiscal Considerations. The cost of supplying x-radiation therapy in the dermatologist's office is not inconsiderable. I have a 120KV superficial therapy machine plus grenz rays equipment. They cost approximately $6500. About 25 percent of my office space, hence one-quarter of my office rent, goes to the housing of these machines. In addition, I pay personal property taxes to the city and county plus an annual x-ray tax to the state. My malpractice insurance rate is nearly doubled because I use this modality, even though the insurance company admits it cannot recall any litigation stemming from x-ray therapy of acne.[4] Many practitioners wonder if the therapeutic results obtained warrant the purchase and use of an ionizing radiation installation. Many fear the threat of increased probability of medicolegal complications. Most practitioners do not charge extra for such therapy, including it in the office-visit charge.

Sixteen physicians felt that the few cases of acne they would treat with x-ray did not justify the cost of buying and using the equipment. Forty-five said that they avoided this modality because of increased expense of malpractice insurance and because of fear of medicolegal entanglements.

Discussion

In considering the results of this questionnaire, one must realize that it established only what the thinking is among dermatologists in the United States, Canada and the Caribbean Islands today. Obviously, the use of x-ray therapy in acne has decreased almost to the point of extinction. The reasons for this are multiple in the minds of those who avoid this energy. Previous studies have demonstrated that many of the explanations advanced—hazards, therapeutic inefficiency and public resistance—are more apparent than real. The theory that by additive effect ionizing and solar radiation can cause cutaneous malignant disease is inviting but unproven and probably a rationalization. Nor is it established that small doses of x-radiation are carcinogenic to the skin, thyroid gland or other portions of the anatomy.

Why, then, the obvious decrease in its use? It is believed that there are two potent factors involved. Most important is the lack of teaching in this field, and second is scare propaganda.

An obvious factor overlooked by about 99 percent of the correspondents is that x-ray is an adjunct, not a complete treatment for acne. There is no question that tetracycline is the number one accepted therapeutic agent in this disease, but the point is, there is no reason why x-ray therapy if proven safe and effective—which I believe it has been—could not be given concurrently with antibiotics and local remedies. If it were not for the roadblocks of "no training" and "scare propaganda," x-ray therapy could still be an important factor in our management of this troublesome dermatosis.

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A FEW NASAL EOSINOPHILS DO NOT AN ALLERGY MAKE

We've been trained to believe that eosinophils in the nasal smear always suggest some allergic condition. However, I'm only concerned with eosinophils when I find them in large numbers. If they are there in over 30 percent, 40, 50, 70, or 100 percent, then we're dealing with a hyperallergic state. I think it's hard to apply significance to the presence of 5, 6, 7, or 10 percent eosinophils; they vary from one time of day to another. So I don't think one should overemphasize the finding of a small number of eosinophils.

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